PTO/SB/08a (01-08)
Approved for use through 02/29/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet one of one

Complete if Known	
Application Number	10/662,950
Filing Date	09/15/2003
First Named Inventor	Harley Kent Heinrich
Art Unit	2612
Examiner Name	Mr. ~~Scott D. Au~~ Nam Nguyen
Attorney Docket Number	YO896-0213R5

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
NN		US- 4,674,618	06-23-1987	Eglise et al.	
NN		US- 4,955,038	09-04-1990	Lee et al.	
		~~US- 5,214,409*~~	~~05-25-1993~~	~~Beigel~~	
NN		US- 6,198,381	03-06-2001	Turner et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US- * Also Cited	in an IDS Listing Filed Oct	7, 2006, and	
		US- Initialed	by the Examiner 03-29-2007		
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
NN	FP1	EP 0 733 988 B1	9-25-1996	International Computers, Limited		
NN	FP2	WO 01/65712 A1	9-07-2001	Magellan Technology PTY Limited		

Examiner Signature	/Nam Nguyen/	Date Considered	05/24/2008

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

Alien's Third Supplemental Preliminary Invalidity Contentions
'841 patent
November 26, 2007

Exhibit C: Invalidity Charts for U.S. Patent No. 6,812,841

As illustrated by the following charts, the asserted claims of U.S. Patent No. 6,812,841 ("the '841 patent") are invalid because all of the limitations of each claim are disclosed and/or taught in the identified prior art references.[1]

Claim 1

Alien contends that claim 1 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least U.S. Patent No. 4,724,427 ("Carroll '427"), U.S. Patent No. 5,410,315 ("Huber '315"), U.S. Patent No. 5,287,112 ("Schuermann '112"), U.S. Patent No. 5,053,774 ("Schuermann '774"), U.S. Patent No. 6,198,381 ("Turner '381), and European Patent No. 0 733 988 ("Edwin '988"), as shown in the invalidity chart below. Alien believes that each and every element of claim 1 is also found in transponders incorporating the IBM-RFID9003 and IBM-RFID9008 chips, manufactured by International Business Machines, Inc. prior to the patent ("IBM 9003/9008"), and the ISD9664/HML231/HML232 chip manufactured by ISD Pty. Ltd. in or around 1993 ("ISD9664"). Thus, claim 1 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart below, claim 1 is invalid under 35 U.S.C. § 103(a) as being obvious in light of (i) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Turner '381, U.S. Patent No. 5,365,551 ("Snodgrass '551"), U.S. Patent No. 5,214,409 ("Beigel '409"),, Edwin '988, PCT Application No. WO 01/65712 ("Littlechild '712), IBM 9003/9008, and/or ISD9664 in combination with U.S. Patent No. 5,365,551 ("Snodgrass '551") and/or U.S. Patent No. 6,942,155 ("Stewart '155").

To the extent Alien may rely on a combination of references to show obviousness, the combination would be nothing more than a combination of familiar elements according to known methods to yield predictable results. A person having ordinary skill in the art (PHOSITA) would have been motivated to make any of the aforementioned combinations in light of the interrelated teachings of the prior art, the demands known to the design community and/or present in the RFID marketplace, and the background knowledge of the PHOSITA. For example, prior to the relevant date of the '841 patent, the RFID marketplace was interested in passive RFID tags with memories that could store and maintain transponder data for a specific length of time following a lapse in the transponder's system power due to lapse in receipt of an interrogating RF signal.

[1] Citations provided for each of references are meant to be exemplary and not exhaustive. Alien reserves its rights to point to other and/or additional portions of each reference as disclosing a claim limitation at issue.

See, e.g., Carroll '427 col. 9, lns. 50-52 (EEPROM use in transponder is "preferred"); Huber '315, col. 9, lns. 25-28 (accord).[2]

The RFID marketplace was specifically concerned about preventing loss of transponder data caused by interruptions in power received from the interrogating RF signal. *See, e.g.*, Littlechild '712, p. 2, ln. 2 - p. 3, ln. 6; Beigel '409 at col. 1, lns. 64-67; Edwin '988 col. 3, lns. 41-45; Stewart '155, col. 2, lns. 9-11. These market demands would have prompted a PHOSITA to design a tag that could retain state information during power off periods, and be able have such data be accessible to the reader after the reader again began transmitting power. The claimed implementation of such a system involves uses of tag components that were obvious and well-known in the art at the time of the invention.

<u>Claim Element</u>	<u>Prior Art</u>
1. An RFID transponder, comprising:	The claim preamble is descriptive of use without adding any structure or substance to claim, and is thus non-limiting. To extent this preamble description is required to be found in the prior art, it is found in each of the references identified for this claim, as is clear from the citations below.
[a] an RF front end adapted to receive an interrogating RF signal;	**Carroll '427** discloses an RF front end to receive an interrogating RF signal. E.g., col. 11, lns. 33-48. **Huber '315** discloses an RF front end to receive an interrogating RF signal. E.g., col. 14, lns. 26-29. **Schuermann '112** discloses an RF front end to receive an interrogating RF signal. E.g., col. 8, lns. 26-45. **Schuermann '774** discloses an RF front end that receives an interrogating RF signal. E.g., claim 1, col. 13, lns. 19-24. **Snodgrass '551** discloses a transponder with an RF front end to receive an interrogating RF signal. E.g., Abstract; col. 10, lns. 23-24. **Stewart '155** discloses an RFID tag that receives an interrogating RF signal. E.g., col. 1, lns. 16-29. **Turner '381** discloses an RFID transponder that receives an interrogating RF signal. E.g., col. 1, lns. 5-10.

[2] Alien notes that the '841 patent used the phrase "said state information." Alien submits that that phrase refers to the state of the transponder, not the state of one data bit. Nothing herein waives that position.

	Beigel '409 discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., col. 4, lns. 9-21, Figure 1. **Edwin '988** discloses an RFID transponder that receives an interrogating RF signal by means of analog circuitry. E.g. col. 5, lns. 26-31. **Littlechild '712** discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., Abstract. **IBM 9003/9008** discloses an RFID tag that receives an interrogating signal. E.g., IN0894079, IN0894081-3. **ISD9664** discloses an RFID tag that receives an interrogating signal. E.g., TAGSYS 00036, TAGSYS 00054; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[b] an analog circuit coupled to said RF front end and adapted to recover analog signals from said received interrogating RF signal,	This circuitry is well known to anyone skilled in the art. In virtually all passive RFID systems, the RF waves are received by the tag antenna through an analog circuit and are demodulated into the incoming RF information. E.g., "The modulated HF [or UHF] signal from the reader is reconstructed in the HF [or UHF] interface by demodulation to create a digital serial data stream for reprocessing in the address and security logic." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses an analog circuit coupled to an RF front end to recover signals. E.g., col. 11, lns. 49-52. **Huber '315** discloses an analog circuit coupled to an RF front end to recover signals. E.g., col. 15, lns. 12-13. **Schuermann '112** discloses an analog circuit coupled to the RF front end to recover signals. E.g., col. 5, lns. 23-25. **Schuermann '774** discloses an analog circuit coupled to the RF front end to recover signals. E.g., fig. 2.

	Snodgrass '551 discloses an analog circuit that recovers signals from the RF front end. E.g., col. 9, lns. 1-20. **Stewart '155** discloses wireless RF tags that are interrogated by sending information from reader. E.g., col. 1, lns. 17-49. **Turner '381** discloses RFID tags that use an analog circuit adapted to recover analog signals from the interrogating RF signal. E.g., col. 1, lns. 10-17. **Beigel '409** discloses an analog circuit adapted to recover analog signals from the received RF signal. E.g., Figure 1. **Edwin '988** discloses an RFID tag that receives an interrogating RF signal by means of analog circuitry. E.g. col. 5, lns. 26-31. **Littlechild '712** discloses an RFID tag that utilizes an RF front end to receive an interrogating RF signal. E.g., Abstract. **IBM 9003/9008** discloses an RFID tag that communicates with base stations through an RF front end. E.g., IN0894079, IN0894081-3. **ISD9664** discloses an RFID tag that utilizes an RF front end to receives analog signals. E.g., TAGSYS 00036; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[c] said analog circuit providing state information defining a desired state of said RFID transponder corresponding to said analog signals;	**Carroll '427** discloses an analog circuit providing state information corresponding to the analog signals. E.g., col. 11, lns. 41-45. **Huber '315** discloses an analog circuit providing state information corresponding to the analog signals. E.g., col. 15, lns. 18-21. **Schuermann '112** discloses an analog circuit providing state information corresponding to the analog signals. E.g., col. 5, lns. 43-46.

	Schuermann '774 discloses an analog circuit providing responder state information corresponding to the analog interrogator signals. E.g., col. 11, lns. 7-17, 23-38. **Snodgrass '551** discloses a circuit providing state information defining the state of the transponder that corresponds to the transmitted analog signals. E.g., col. 6, ln. 29-col. 7, ln. 3 and Figure 11. **Turner '381** discloses an analog circuit that provides information received from the reader regarding the transponder's mode of operation, which constitutes a transponder state. E.g., col. 1, lns. 28-30. **Beigel '409** discloses an analog circuit that provides information received from the interrogator regarding the desired state of the transponder. E.g., Figure 1, Figure 3. **Edwin '988** discloses an RFID transponder that receives information through its analog circuitry from the interrogator regarding the tag's desired power transmission mode, which constitutes a tag state. E.g. col. 5, lns. 12-24. **Littlechild '712** discloses an RFID tag that receives data from the interrogating signal through the analog circuit, including a time stamp number and a TRP identification number, thereby defining a tag state. E.g., p. 20, lns. 4-12. **IBM 9003/9008** discloses an RFID tag that receives commands through its RF front end that define states of the tag. E.g., IN0894081-3. **ISD9664** discloses an RFID tag that utilizes an RF front end to receive signals from the reader that define which mode the tag will operate in. E.g., TAGSYS 00019; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[d] a digital state machine coupled to said analog circuit and adapted to execute at least one	A digital state machine coupled to the analog RF front end is inherent in passive RFID tags with addressable memory functions. "Transponders with a memory function contain RAM, ROM, EEPROM, or FRAM and a HF [or UHF] interface to

command in accordance with said state information;	provide the power supply and permit communication with the reader. The main characteristic of this family of transponders is the realization of address and security logic on a chip using a state machine." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses a state machine in digital form to execute at least one command. E.g., col. 12, lns. 13-16. **Huber '315** discloses a digital state machine for executing commands in accordance with the state information received. E.g., "...and thereupon activates the programming logic 232 if a programming command has been previously received by command decoder 230." Col. 9, lns. 21-23. **Schuermann '112** discloses such a digital state machine coupled to an analog circuit. E.g., col. 10, lns. 38-40, whereby the digital signal switches the Q factor that is a part of the analog circuit. **Schuermann '774** discloses a digital state machine coupled to the analog circuit for the purpose of executing commands received from the interrogator. E.g., col. 11, lns. 7-17, 23-38. **Snodgrass '551** specifies a system in which the transponder utilizes a digital state machine to execute at least one command in accordance with state information. E.g., col. 24, lns. 16-18. **Turner '381** discloses a transponder controller operating in accordance with mode commands received from the reader, which constitutes a state machine. E.g., col. 2, lns. 25-37. **Beigel '409** discloses digital circuitry of a state machine that executes commands in accordance with data received from the interrogator. E.g., col. 3, lns. 4-12; Figures 1-3. **Edwin '988** discloses an RFID transponder that utilizes a digital state machine to communicate in response to interrogation commands. E.g. col. 1, lns. 29-38; Figure 4. **Littlechild '712** discloses a digital processor that executes commands in accordance with state information received from the interrogating signal. E.g., p. 21, l. 18 - p. 22, l. 12.

	IBM 9003/9008 discloses digital state machines on the tag that execute commands in accordance with state information. E.g., IN0894081-3. **ISD9664** discloses a digital processing chip that processes state information. E.g., TAGSYS 00019-21; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[e] a power capacitor coupled to said analog circuit and deriving a voltage rectified from said interrogating RF signal to charge said power capacitor,	Passive RFID tags derive a voltage rectified from the interrogating RF signal to power the chip circuitry. "Passive transponders, *i.e.* transponders that do not have their own power supply, are supplied with energy via the HF [or UHF] field of the reader. To achieve this, the HF [or UHF] interface draws current from the transponder antenna, which is rectified and supplied to the chip as a regulated voltage supply." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses a circuit with inherent capacitance that accumulates the rectified voltage from the interrogating RF signal. E.g., col. 7, ln. 63-col. 8, ln. 27. **Huber '315** discloses an energy accumulator for storing voltage derived from the interrogating RF signal. E.g., col. 15, lns. 14-17. It specifies a capacitor charged by the rectified voltage, which is the most fundamental and obvious type of such voltage accumulator circuit. E.g., col. 6, lns. 6-12. **Schuermann '112** discloses a power capacitor coupled to the RF front end and deriving a voltage rectified from the interrogating RF signal. E.g., "wherein said energy storage device is a storage capacitor." Col. 8, lns. 51-52. **Schuermann '774** discloses an energy accumulator coupled to the RF front end and deriving a voltage rectified from the interrogating RF signal. E.g., "...an energy accumulator for storing the energy contained in said at least one interrogation signal as received by said responder unit." Col. 13, lns. 28-30, Claim 1. It specifies a capacitor as one type of such energy accumulator. E.g., col. 4, lns. 65-67.

	Turner '381 discloses a capacitor that powers the transponder, which is energized by the interrogating RF signal. E.g., col. 1, lns. 30-37, col. 4. lns. 38-39. **Beigel '409** discloses a capacitor that powers the transponder with voltage derived from the interrogating RF signal. E.g., col. 4 lns. 48-54, Figure 1. **Edwin '988** discloses a power supply for the transponder that charges a capacitor with voltage derived from the interrogating RF signal. E.g., col. 3, lns. 32-40. **Littlechild '712** discloses a passive transponder with an on-board power supply that is charged by voltage derived from the interrogating RF signals, including a storage capacitor. E.g., Abstract, p. 2, ln. 21 - p. 3, ln. 5, p. 21, lns. 13-15, p. 23. lns. 20-23. **IBM 9003/9008** discloses a power capacitor coupled to its analog section and deriving voltage from the RF signal. E.g., IN0894084. **ISD9664** discloses an RFID tag that utilizes a power capacitor that powers its circuitry with voltage derived from the RF signal. E.g., TAGSYS 00038.
[f] said power capacitor thereby providing electrical power for said analog circuit, said digital state machine and said memory;	<u>Each of the following contains an analog circuit, a digital state machine and memory.</u> **Carroll '427** discloses a circuit which utilized its distributed capacitance to power the chip's analog, logic, and memory circuits. E.g., col. 7, ln. 63-col. 8, ln. 27. **Huber '315** discloses an energy accumulator that provides electrical power for the responder unit. E.g., col. 6, lns. 6-12; col. 15, lns. 14-17. **Schuermann '112** discloses that the capacitor provides electrical power for the transponder circuits. E.g., col. 6, lns. 5-8. **Schuermann '774** discloses that the capacitor provides electrical power for the transponder circuits. E.g., col. 5, lns. 30-36.

	Turner '381 discloses that the capacitor provides the transponder with power. E.g., col. 3, lns. 49-28. **Edwin '988** discloses a power supply for the transponder that charges a capacitor with voltage derived from the interrogating RF signal. E.g., col. 3, lns. 32-40. **IBM 9003/9008** discloses a power capacitor that provides electrical power for the tag's circuits. E.g., IN0894084. **ISD9664** discloses an RFID tag that utilizes a power capacitor that powers its circuitry. E.g., TAGSYS 00038.
[g] and a state holding cell coupled to said digital state machine and being adapted to maintain said state information during a loss in power provided by said power capacitor due to lapse in receipt of said interrogating RF signal by said RF front end.	**Carroll '427** discloses a cell that maintains its state information during a loss of power from the interrogating RF signal. E.g., "preferably, an EEPROM (Erasable Electrical Programmable Read Only Memory) device could be used." Col. 9, lns. 50-52. **Huber '315** discloses using a variety of persistent memory devices, including SRAMs, DRAMs, EEPROMs, EPROMs, and latches to store state information during a loss in tag power. E.g., col. 4, lns. 35-45, col. 13, lns. 51-57. **Schuermann '112** discloses the use of an EEPROM memory and a latch to maintain state information following the lapse of the interrogating RF signal. E.g., col. 7, ln. 68-col. 8, ln. 7. **Schuermann '774** discloses the use of RAM memory, which is capable of maintaining state information for a period of time following the lapse of the interrogating RF signal. E.g., col. 11 lns. 33-38. Such memory would inherently include RAM, ROM, EEPROM, or any other basic form of memory that is maintained for a specific duration following lapse of power. **Snodgrass '551** discloses the use of battery-powered memory able to maintain digital state information during a loss of power from the interrogating RF signal. E.g., col. 7, lns. 28-36. A PHOSITA would expect such memory to be RAM, an SRAM, or an EEPROM. **Stewart '155** discloses the use of tenacious latches for tag or

	command states to persist even through short interruptions of the power supply. E.g., col. 2, lns. 9-11; col. 5, lns. 8-11. Stewart '155 further discloses tag power supplied by the receipt of an interrogating RF signal, which may be interrupted. E.g., col.1, lns. 26-41; col. 2, lns. 31-34. **Turner '381** discloses the use of a capacitor to maintain the transponder's mode for a period of time that continues regardless of whether the transponder remains energized or not. E.g., col. 4, lns. 26-35. **Beigel '409** discloses the use of an EEPROM to write and store tag data in response to a command received from the interrogator, which persists through interruptions in the passive transponder's power supply caused by a lapse in the interrogating RF signal. E.g., col. 6, ln. 60 - col. 7, ln. 2. **Edwin '988** discloses the use of non-volatile memory in a passive transponder to store a bit of information in response to the interrogator's command, the stored bit indicating whether the transponder is to transmit in high or low power mode. E.g., col. 3, ln. 41 - col. 4, ln. 11. **Littlechild '712** discloses a variety of memory cells that store transponder state information during a loss in transponder power due to a lapse in the interrogating RF signal, including modified DRAM cells and EEPROMs. E.g., Abstract; p. 21, l. 18 - p. 25, l. 10. **IBM 9003/9008** discloses a lockable state machine that maintains state data once locked or unlocked, regardless of loss of power from the interrogating RF signal. E.g., IN0894100. IBM 9003/9008 further discloses that the RFID tag writes data to its EEPROM in response to commands that include "WRITE_MULTIPLE, WRITE, BULK_WRITE, LOCK, and UNLOCK," which data is stored through lapses in tag power. E.g., IN0894123. **ISD9664** discloses a capacitor that is charged prior to a loss of power to indicate whether the tag should enter program mode after regaining power that was lost during a lapse in power from the tag's power capacitor. E.g., TAGSYS 00023, TAGSYS

	00030; TAGSYS 00032; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-5.

Alien further contends that claim 1, and each claim that depends therefrom, is indefinite under 35 U.S.C. § 112(2), and that it is not supported by an enabling written description (i.e., the written description is inadequate) under 35 U.S.C. § 112(1), with regard to the phrase "during a loss in power provided by said power capacitor due to lapse in receipt of said interrogating RF signal."

Claim 8

Alien contends that claim 8 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Edwin '988, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart for claim 1 and the chart below. Thus, claim 8 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart for claim 1 and the chart below, claim 8 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Edwin '988, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664 in combination with Snodgrass '551, Stewart '155, and/or Turner '381.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 8.

Claim Element	Prior Art
8. The RFID transponder of claim **1**, wherein said state information defines plural operating states of said digital state machine.	**Carroll '724** discloses a digital state machine that can be defined into plural operating states. E.g., fig. 9. **Huber '315** discloses multiple operating states. E.g., Col. 8, lns. 17-22. **Schuermann '112** discloses an RFID transponder that has plural operating states defined by state information. E.g., col. 9, lns. 9-34. **Schuermann '774** discloses a digital state machine coupled to the analog circuit for the purpose of executing commands received from the interrogator, thereby permitting a plurality of states. E.g., col. 11, lns. 7-17, 23-38.

	Snodgrass '551 discloses state information utilized to define multiple states of the transponder. E.g., col. 6, lns. 40-42. **Beigel '409** discloses a variety of transponder data states that may be recorded on an EEPROM. E.g., col. 6, ln. 60 - col. 7, ln. 2. **Edwin '988** discloses the use of non-volatile memory in a passive transponder to store multiple bits of transponder state information. E.g., col. 3, lns. 41-57. **Littlechild '712** discloses multiple items of state information that are maintained in persistent memory cells. E.g., p. 21, lns. 13-17. **IBM 9003/9008** discloses multiple operating states that may be maintained with use of the EEPROM. E.g., IN0894123. **ISD9664** discloses multiple operating states. E.g., TAGSYS 00005-6; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.

Claim 9

Alien contends that claim 9 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart below. Thus, claim 9 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart below, claim 9 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664 in combination with Snodgrass '551 and/or Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 9.

Claim Element	Prior Art

9. An RFID transponder, comprising:	Preamble descriptive of use without adding any structure or substance to claim, and thus non-limiting. To extent this preamble description is required to be found in the prior art, it is found in each of the references identified above.
[a] means for receiving an interrogating RF signal;	**Carroll '427** discloses an RF front end to receive an interrogating RF signal. E.g., col. 11, lns. 33-48. **Huber '315** discloses an RF front end to receive an interrogating RF signal. E.g., col. 14, lns. 26-29. **Schuermann '112** discloses an RF front end to receive an interrogating RF signal. E.g., col. 8, lns. 26-45. **Schuermann '774** discloses an RF front end that receives an interrogating RF signal. E.g., claim 1, col. 13 lns. 19-24. **Snodgrass '551** discloses a transponder with an RF front end to receive an interrogating RF signal. E.g., Abstract; col. 10, lns. 23-24. **Stewart '155** discloses an RFID tag that receives an interrogating RF signal. E.g., col. 1, lns. 16-29. **Turner '381** discloses an RFID transponder that receives an interrogating RF signal. E.g., col. 1, lns. 5-10; col. 1. l. 63-col.2, l. 4. **Beigel '409** discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., col. 4, lns. 9-21, Figure 1. **Edwin '988** discloses an RFID transponder that receives an interrogating RF signal by means of analog circuitry. E.g. col. 5, lns. 26-31. **Littlechild '712** discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., Abstract. **IBM 9003/9008** discloses an RFID tag that receives an interrogating RF signal. E.g., IN0894079, IN0894081-3.

	ISD9664 discloses an RFID tag that receives an interrogating RF signal. E.g., TAGSYS 00036; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[b] means for recovering analog signals from said received interrogating RF signal and providing state information defining a desired state of said RFID transponder corresponding to said analog signals;	This circuitry is well known to anyone skilled in the art. In virtually all passive RFID systems, the RF waves are received by the tag antenna through an analog circuit and are demodulated into the incoming RF information. E.g., "The modulated HF [or UHF] signal from the reader is reconstructed in the HF [or UHF] interface by demodulation to create a digital serial data stream for reprocessing in the address and security logic." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses an analog circuit providing information corresponding to the analog signals. E.g., col. 11, lns. 41-45. **Huber '315** discloses an analog circuit providing information corresponding to the analog signals. E.g., col. 15, lns. 18-21. **Schuermann '112** discloses an analog circuit coupled to the RF front end to recover signals. E.g., col. 5, lns. 23-25. **Schuermann '774** discloses an analog circuit coupled to the RF front end to recover signals. E.g., fig. 2. **Snodgrass '551** discloses an analog circuit that recovers signals from the RF front end. E.g., col. 9, lns. 1-20. **Stewart '155** discloses wireless RF tags that are interrogated by sending information from reader. E.g., col. 1, lns. 17-49. **Turner '381** discloses an analog circuit that provides information received from the reader directing the transponder's mode of operation. E.g., col. 2, lns. 5-8. **Beigel '409** discloses an analog circuit that provides information received from the interrogator regarding the desired state of the transponder. E.g., Figure 1, Figure 3.

	Edwin '988 discloses an RFID transponder that receives information through its analog circuitry from the interrogator regarding the tag's desired power transmission mode. E.g. col. 5, lns. 12-24. **Littlechild '712** discloses an RFID tag that receives data from the interrogating signal through the analog circuit, including a time stamp number and a TRP identification number. E.g., p. 20, lns. 4-12. **IBM 9003/9008** discloses an RFID tag that communicates with base stations through an RF front end. E.g., IN0894079, IN0894081-3. **ISD9664** discloses an RFID tag that utilizes an RF front end to receives analog signals. E.g., TAGSYS 00036, TAGSYS 00054; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[c] means for executing at least one command in accordance with said state information;	The capacity for plural operating states is inherent in a digital state machine. E.g., "A state machine … is an arrangement used for executing logic operations, which also has the capability of storing variable states." Klaus Finkenzeller, *The RFID Handbook*, at p. 174 (1999) (discussing basic RFID transponder with memory function). **Carroll '427** discloses a state machine in digital form to execute at least one command. E.g., col. 12, lns. 13-16. **Huber '315** discloses a digital state machine for executing commands in accordance with the state information received. E.g., "...and thereupon activates the programming logic 232 if a programming command has been previously received by command decoder 230." Col. 9, lns. 21-23. **Schuermann '112** discloses such a digital state machine coupled to an analog circuit. E.g., col. 10, lns. 38-40, whereby the digital signal switches the Q factor that is a part of the analog circuit. **Schuermann '774** discloses a digital state machine coupled to the analog circuit for the purpose of executing commands

	received from the interrogator. E.g., col. 11, lns. 7-17, 23-38. **Snodgrass '551** specifies a system in which the transponder utilizes a digital state machine to execute at least one command in accordance with state information. E.g., col. 24, lns. 16-18. **Turner '381** discloses a transponder controller operating in accordance with mode commands received from the reader. E.g., col. 2, lns. 5-8, 25-37. **Beigel '409** discloses digital circuitry that executes commands in accordance with data received from the interrogator. E.g., col. 3, lns. 4-12, Figures 1-3. **Edwin '988** discloses an RFID transponder that utilizes a digital state machine to communicate in response to interrogation commands. E.g. col. 1, lns. 29-38; Figure 4. **Littlechild '712** discloses a digital processor that executes commands in accordance with state information received from the interrogating signal. E.g., p. 21, l. 18 - p. 22, l. 12. **IBM 9003/9008** discloses digital state machines on the tag that execute commands in accordance with state information. E.g., IN0894081-3. **ISD9664** discloses a digital processing chip that executes commands in accordance with state information. E.g., TAGSYS 00003-4; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[d] means for storing and retrieving digital data responsive to said at least one command;	This is inherent in RFID systems with writeable transponder memory cells. **Carroll '427** discloses use of a memory for storing and retrieving digital data. E.g., "Preferably, an EEPROM (Erasable Electrical Programmable Read Only Memory) device could be used." Col. 9, lns. 50-52. **Huber '315** discloses means to store information from the transponder which can be a command to a PHOSITA. E.g.,

	"...means are provided to demodulate from the RF carrier wave data which may be stored in the responder unit memory." Col. 2, lns. 8-10. **Schuermann '112** discloses the use of an EEPROM memory and a latch to maintain state information following the lapse of the interrogating RF signal. E.g., col. 7, ln. 68-col. 8, ln. 7. **Schuermann '774** discloses the use of RAM memory, which is capable of maintaining state information for a period of time following the lapse of the interrogating RF signal. E.g., col. 11 lns. 33-38. It is inherent in the description of such memory in the patent that it could include RAM, ROM, EEPROM, or any other form of memory. **Snodgrass '551** discloses the use of battery-powered memory able to maintain digital state information during a loss of power from the interrogating RF signal. E.g., col. 7 lns. 28-36. A PHOSITA would expect such memory to be either RAM, an SRAM, or an EEPROM. **Turner '381** discloses a transponder that stores codes for transmission to the reader, which inherently requires memory in the transponder. E.g., col. 3, lns. 30-34. **Beigel '409** discloses memory able to store digital data responsive to commands. E.g., col. 6, ln. 60 - col. 7, ln. 2, Figures 1-3. **Edwin '988** discloses memory (registers) able to store digital data responsive to commands. E.g. col. 3, lns. 41-48, Figure 4. **Littlechild '712** discloses memory able to store digital data responsive to commands. E.g., Abstract, Figure 8, Figure 11. **IBM 9003/9008** discloses an EEPROM. E.g., IN0894083. **ISD9664** discloses a means of storing and retrieving digital data responsive to at least one command. E.g., TAGSYS 00011-14, 00018-22; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.

[e] means for providing electrical power for said RFID transponder derived from said interrogating RF signal;	Passive RFID tags derive a voltage rectified from the interrogating RF signal to power the chip circuitry. "Passive transponders, *i.e.* transponders that do not have their own power supply, are supplied with energy via the HF [or UHF] field of the reader. To achieve this, the HF [or UHF] interface draws current from the transponder antenna, which is rectified and supplied to the chip as a regulated voltage supply." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses a circuit that accumulates the rectified voltage from the interrogating RF signal. E.g., col. 7, ln. 63-col. 8, ln. 27. **Huber '315** discloses "an energy accumulator for storing the energy contained in said interrogation signal received by said responder unit by which the components of said responder unit may be supplied with energy," Col. 15, lns. 14-17. **Schuermann '112** discloses a transponder utilizing an electrical power derived from the interrogating RF signal and stored for powering the circuit "wherein said energy storage device is a storage capacitor." Col. 8, lns. 51-52. **Schuermann '774** discloses a responder unit with: "...an energy accumulator for storing the energy contained in said at least one interrogation signal as received by said responder unit," Col. 13, lns. 28-30, Claim 1. **Turner '381** discloses means for powering the transponder, which is energized by the interrogating RF signal. E.g., col. 1, lns. 17-22 (prior art); col. 1 lns. 30-37(prior art); col. 4. lns. 38-39. **Beigel '409** discloses a capacitor that powers the transponder with voltage derived from the interrogating RF signal. E.g., col. 4 lns. 48-54, Figure 1. **Edwin '988** discloses a power supply for the transponder that charges a capacitor with voltage derived from the interrogating RF signal. E.g., col. 3, lns. 32-40. **Littlechild '712** discloses a passive transponder with an on-

	board power supply that is charged by voltage derived from the interrogating RF signals. E.g., Abstract, p. 2, ln. 21 - p. 3, ln. 5, p. 21, lns. 13-15. **IBM 9003/9008** discloses a power capacitor coupled to its analog section and deriving voltage from the RF signal. E.g., IN0894084. **ISD9664** discloses an RFID tag that utilizes a power capacitor that powers its circuitry with voltage derived from the RF signal. E.g., TAGSYS 00038, 49.
[f] and means for maintaining said state information during a temporary lapse in receipt of said interrogating RF signal.	**Carroll '427** discloses an EEPROM memory that maintains the state information when the interrogating RF signal lapses. It specifies "an EEPROM (Erasable Electrical Programmable Read Only Memory) device." Col. 9, lns. 51-52. **Huber '315** discloses using a variety of persistent memory devices, including SRAMs, DRAMs, EEPROMs, EPROMs, and latches to store state information during a loss in tag power. E.g., col. 4, lns. 35-45, col. 13, lns. 51-57. **Schuermann '112** discloses the use of an EEPROM memory, SRAMs, and latches to maintain state information following the lapse the interrogating RF signal. E.g., Col. 7, ln. 68-col. 8, ln. 7. **Schuermann '774** discloses the use of RAM memory, which is capable of maintaining state information for a period of time following the lapse of the interrogating RF signal. E.g., col. 11 lns. 33-38. Such memory would inherently include RAM, ROM, EEPROM, or any other basic form of memory that is maintained for a specific duration following lapse of power. **Snodgrass '551** discloses the use of battery-powered memory able to maintain digital state information during a loss of power from the interrogating RF signal. E.g., col. 7 lns. 28-36. A PHOSITA would expect such memory to be either RAM, SRAM or an EEPROM. **Stewart '155** discloses the use of tenacious latches for tag or command states to persist even through short interruptions of the power supply. E.g., col. 2, lns. 9-11; col. 5, lns. 8-11. Stewart

	'155 further discloses tag power supplied by the receipt of an interrogating RF signal, which may be interrupted. E.g., col.1, lns. 26-41; col. 2, lns. 31-34. **Turner '381** discloses maintaining the transponder's mode for a period of time that continues regardless of whether the transponder remains energized or not. E.g., col. 4, lns. 26-35. **Beigel '409** discloses the use of an EEPROM to write and store tag data in response to a command received from the interrogator, which persists through interruptions in the passive transponder's power supply caused by a lapse in the interrogating RF signal. E.g., col. 6, ln. 60 - col. 7, ln. 2. **Edwin '988** discloses the use of non-volatile memory in a passive transponder to store a bit of information in response to the interrogator's command, the stored bit indicating whether the transponder is to transmit in high or low power mode. E.g., col. 3, ln. 41 - col. 4, ln. 11. **Littlechild '712** discloses a variety of memory cells that store transponder state information during a loss in transponder power due to a lapse in the interrogating RF signal, including modified DRAM cells and EEPROMs. E.g., Abstract, p. 21, l. 18 - p. 25, l. 10. **IBM 9003/9008** discloses a lockable state machine that maintains state data once locked or unlocked, regardless of loss of power from the interrogating RF signal. E.g., IN0894100. IBM 9003/9008 further discloses that the RFID tag writes data to its EEPROM in response to commands that include "WRITE_MULTIPLE, WRITE, BULK_WRITE, LOCK, and UNLOCK," which data is stored through lapses in tag power. E.g., IN0894123. **ISD9664** discloses a capacitor that is charged prior to a loss of power to indicate whether the tag should enter program mode after regaining power that was lost during a lapse in power from the tag's power capacitor. E.g., TAGSYS 00023,TAGSYS 00030; TAGSYS 00032; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-5.

Alien further contends that claim 9, and each claim that depends therefrom, is indefinite under 35 U.S.C. § 112(2), and that it is not supported by an enabling written description (i.e., the written description is inadequate) under 35 U.S.C. § 112(1), with regard to to the phrase "a temporary lapse in receipt of said interrogating RF signal."

Claim 10

Alien contends that claim 10 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart for claim 9 and the chart below. Thus, claim 10 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart below, claim 10 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, in combination with Snodgrass '551 and/or Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 10.

Claim Element	Prior Art
10. The RFID transponder of claim 9, wherein said receiving means further comprises an RF front end.	**Carroll '427** discloses an RF front end to receive an interrogating RF signal. E.g., col. 11, lns. 33-48. **Huber '315** discloses an RF front end to receive an interrogating RF signal. E.g., col. 14, lns. 26-29. **Schuermann '112** discloses an RF front end to receive an interrogating RF signal. E.g., col. 8, lns. 26-45. **Schuermann '774** discloses an RF front end that receives an interrogating RF signal. E.g., claim 1, col. 13 lns. 19-24. **Snodgrass '551** discloses a transponder with an RF front end to receive an interrogating RF signal. E.g., Abstract; col. 10, lns. 23-24. **Stewart '155** discloses an RFID tag that receives an

	interrogating RF signal. E.g., col. 1, lns. 16-29. **Turner '381** discloses an RFID transponder that receives an interrogating RF signal. E.g., col. 3, l. 64-col.4, l. 16. **Beigel '409** discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., col. 4, lns. 9-21, Figure 1. **Edwin '988** discloses an RFID transponder that receives an interrogating RF signal by means of analog circuitry. E.g. col. 5, lns. 26-31. **Littlechild '712** discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., Abstract. **IBM 9003/9008** discloses an RFID tag that receives an interrogating signal. E.g., IN0894079, IN0894081-3. **ISD9664** discloses an RFID tag that receives an interrogating signal. E.g., TAGSYS 00036; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.

Claim 11

Alien contends that claim 11 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart for claim 9 and the chart below. Thus, claim 11 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart below, claim 11 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664 in combination with Snodgrass '551 and/or Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 11.

Claim Element	Prior Art
11. The RFID transponder of claim **9**, wherein said recovering means further comprises an analog circuit.	This circuitry is well known to anyone skilled in the art. In virtually all passive RFID systems, the RF waves are received by the tag antenna through an analog circuit and are demodulated into the incoming RF information. E.g., "The modulated HF [or UHF] signal from the reader is reconstructed in the HF [or UHF] interface by demodulation to create a digital serial data stream for reprocessing in the address and security logic." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses an analog circuit coupled to an RF front end to recover signals. E.g., col. 11, lns. 49-52. **Huber '315** discloses an analog circuit coupled to an RF front end to recover signals. E.g., col. 15, lns. 12-13. **Schuermann '112** discloses an analog circuit coupled to the RF front end to recover signals. E.g., col. 5, lns. 23-25. **Schuermann '774** discloses an analog circuit coupled to the RF front end to recover signals. E.g., fig. 2. **Snodgrass '551** discloses an analog circuit that recovers signals from the RF front end. E.g., col. 9, lns. 1-20. **Stewart '155** discloses wireless RF tags that are interrogated by sending information from reader. E.g., col. 1, lns. 17-49. **Turner '381** discloses RFID tags that use an analog circuit adapted to recover analog signals from the interrogating RF signal. E.g., col. 3, l. 64-col. 4, 16. **Beigel '409** discloses an analog circuit adapted to recover analog signals from the received RF signal. E.g., Figure 1. **Edwin '988** discloses an RFID tag that receives an interrogating RF signal by means of analog circuitry. E.g. col. 5, lns. 26-31. **Littlechild '712** discloses an RFID tag that utilizes an RF front end to receive an interrogating RF signal. E.g., Abstract. **IBM 9003/9008** discloses an RFID tag that communicates with

	base stations through an analog circuit. E.g., IN0894079, IN0894081-3. **ISD9664** discloses an RFID tag that utilizes an analog circuit to receive RF signals. E.g., TAGSYS 00036; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.

Claim 12

Alien contends that claim 12 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart for claim 9 and the chart below. Thus, claim 12 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart below, claim 12 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, in combination with Snodgrass '551 and/or Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 12.

Claim Element	Prior Art
12. The RFID transponder of claim **9**, wherein said executing means further comprises a digital state machine.	A digital state machine coupled to the analog RF front end is inherent in passive RFID tags with memory functions. "Transponders with a memory function contain RAM, ROM, EEPROM, or FRAM and a HF [or UHF] interface to provide the power supply and permit communication with the reader. The main characteristic of this family of transponders is the realisation of address and security logic on a chip using a state machine." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses a state machine in digital form to execute at least one command. E.g., col. 12, lns. 13-16. **Huber '315** discloses a digital state machine for executing commands in accordance with the state information received.

	E.g., "...and thereupon activates the programming logic 232 if a programming command has been previously received by command decoder 230." Col. 9, lns. 21-23. **Schuermann '112** discloses such a digital state machine coupled to an analog circuit. E.g., col. 10, lns. 38-40, whereby the digital signal switches the Q factor that is a part of the analog circuit. **Schuermann '774** discloses a digital state machine coupled to the analog circuit for the purpose of executing commands received from the interrogator. E.g., col. 11, lns. 7-17, 23-38. **Snodgrass '551** specifies a system in which the transponder utilizes a digital state machine to execute at least one command in accordance with state information. E.g., col. 24, lns. 16-18. **Turner '381** discloses a transponder controller changes its mode (state) in accordance with mode commands received from the reader. E.g., col. 2, lns. 25-37. **Beigel '409** discloses digital circuitry that changes its state commands in accordance with data received from the interrogator. E.g., col. 3, lns. 4-12; col. 9, lns. 21-53; Figures 1-3. **Edwin '988** discloses an RFID transponder that utilizes a digital state machine to communicate in response to interrogation commands. E.g. col. 1, lns. 29-38; Figure 4. **Littlechild '712** discloses a digital processor that executes commands in accordance with state information received from the interrogating signal. E.g., p. 21, l. 18 - p. 22, l. 12. **IBM 9003/9008** discloses digital state machines on the tag that execute commands in accordance with state information. E.g., IN0894081-3. **ISD9664** discloses a digital processing chip that processes state information. E.g., TAGSYS 00003-4; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.

Claim 13

Alien contends that claim 13 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart for claims 9, 12 and the chart below. Thus, claim 13 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart for claims 9, 12 and the chart below, claim 13 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, 'Schuermann '112, Schuermann '774, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, in combination with Snodgrass '551, Stewart '155, and/or Turner '381.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 13.

Claim Element	Prior Art
13. The RFID transponder of claim **12**, wherein said state information defines plural operating states of said digital state machine.	The capacity for plural operating states is inherent in a digital state machine. E.g., "A state machine … is an arrangement used for executing logic operations, which also has the capability of storing variable states." Klaus Finkenzeller, *The RFID Handbook*, at p. 174 (1999) (discussing basic RFID transponder with memory function). **Carroll '724** discloses a digital state machine that can be defined into plural operating states. E.g., fig. 9. **Huber '315** discloses multiple operating states. It states that "...the transponder is correctly initiated during the next charge phase and does not rest in a undefined or incorrect state such that a subsequent charge-up could be blocked. Additionally by this function, each transponder 12 within the field of the interrogator 10 has an identical start condition." Col. 8, lns. 17-22. **Schuermann '112** discloses an RFID transponder that has plural operating states defined by state information. E.g., col. 9, lns. 9-34.

	Schuermann '774 discloses a digital state machine coupled to the analog circuit for the purpose of executing commands received from the interrogator, thereby permitting a plurality of states. E.g., col. 11, lns. 7-17, 23-38. **Snodgrass '551** discloses state information utilized to define multiple states of the transponder. E.g., "The output of state register 50 is a state signal 52, which forms control bus 54." Col. 6, lns. 40-42. **Beigel '409** discloses a variety of transponder data states that may be recorded on an EEPROM. E.g., col. 6, ln. 60 - col. 7, ln. 2. **Edwin '988** discloses the use of non-volatile memory in a passive transponder to store multiple bits of transponder state information. E.g., col. 3, lns. 41-57. **Littlechild '712** discloses multiple items of state information that are maintained in persistent memory cells. E.g., p. 21, lns. 13-17. **IBM 9003/9008** discloses multiple operating states that may be maintained with use of the EEPROM. E.g., IN0894123. **ISD9664** discloses multiple operating states. E.g., TAGSYS 00005-6; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.

Claim 14

Alien contends that claim 14 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart for claim 9 and the chart below. Thus, claim 14 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart for claim 9 and the chart below, claim 14 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, in combination with Snodgrass '551 and/or Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 14.

Claim Element	Prior Art
14. The RFID transponder of claim **9**, wherein said storing and retrieving means further comprises a memory device.	**Carroll '427** discloses a cell that maintains its state information during a loss of power from the interrogating RF signal. E.g., "preferably, an EEPROM (Erasable Electrical Programmable Read Only Memory) device could be used." Col. 9, lns. 50-52. **Huber '315** discloses using a variety of persistent memory devices, including SRAMs, DRAMs, EEPROMs, EPROMs, and latches to store state information during a loss in tag power. E.g., col. 4, lns. 35-45, col. 13, lns. 51-57. **Schuermann '112** discloses the use of an EEPROM memory, SRAMs, and latches to maintain state information following the lapse the interrogating RF signal. E.g., Col. 7, ln. 68-col. 8, ln. 7. **Schuermann '774** discloses the use of RAM memory, which is capable of maintaining state information for a period of time following the lapse of the interrogating RF signal. E.g., col. 11, lns. 33-38. Such memory would inherently include RAM, ROM, EEPROM, or any other basic form of memory that is maintained for a specific duration following lapse of power. **Snodgrass '551** discloses the use of battery-powered memory

	able to maintain digital state information during a loss of power from the interrogating RF signal. E.g., col. 7, lns. 28-36. A PHOSITA would expect such memory to be either RAM, an SRAM, or an EEPROM. **Turner '381** discloses a transponder that stores data for transmission to the reader, which requires memory in the transponder. E.g., col. 3, lns. 30-34. **Beigel '409** discloses memory able to store digital data responsive to commands. E.g., col. 6, ln. 60 - col. 7, ln. 2, Figures 1-3. **Edwin '988** discloses memory (registers) able to store digital data responsive to commands. E.g. col. 3, lns. 41-48, Figure 4. **Littlechild '712** discloses memory able to store digital data responsive to commands. E.g., Abstract, Figure 8, Figure 11. **IBM 9003/9008** discloses an EEPROM. E.g., IN0894083. **ISD9664** discloses an EEPROM. E.g., TAGSYS 00018-22; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.

<u>Claim 21</u>

Alien contends that claim 21 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, as shown in the invalidity chart below. Thus, claim 21 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart below, claim 21 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, in combination with Snodgrass '551 and/or Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of

or variations on the cited prior art so as to arrive at claim 21.

Claim Element	Prior Art
21. A method for operating an RFID transponder, comprising the steps of:	Preamble descriptive of use without adding any structure or substance to claim, and thus non-limiting. To extent this preamble description is required to be found in the prior art, it is found in each of the references identified above.
[a] receiving an interrogating RF signal;	**Carroll '427** discloses an RF front end to receive an interrogating RF signal. E.g., col. 11, lns. 33-48. **Huber '315** discloses an RF front end to receive an interrogating RF signal. E.g., col. 14, lns. 26-29. **Schuermann '112** discloses an RF front end to receive an interrogating RF signal. E.g., col. 8, lns. 26-45. **Schuermann '774** discloses an RF front end that receives an interrogating RF signal. E.g., claim 1, col. 13 lns. 19-24. **Snodgrass '551** discloses a transponder with an RF front end to receive an interrogating RF signal. E.g., Abstract; col. 10, lns. 23-24. **Stewart '155** discloses an RFID tag that receives an interrogating RF signal. E.g., col. 1, lns. 16-29. **Turner '381** discloses an RFID transponder that receives an interrogating RF signal. E.g., col. 3, lns. 30-43. **Beigel '409** discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., col. 4, lns. 9-21, Figure 1. **Edwin '988** discloses an RFID transponder that receives an interrogating RF signal by means of analog circuitry. E.g. col. 5, lns. 26-31. **Littlechild '712** discloses an RFID transponder that utilizes an RF front end to receive an interrogating RF signal. E.g., Abstract. **IBM 9003/9008** discloses an RFID tag that receives an

	interrogating signal. E.g., IN0894079, IN0894081-3. **ISD9664** discloses an RFID tag that receives an interrogating signal. E.g., TAGSYS 00036, TAGSYS 00054; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[b] recovering analog signals from said received interrogating RF signal and providing state information defining a desired state of said RFID transponder corresponding to said analog signals;	Recovering analog signals that define the state of an RFID transponder is well known to anyone skilled in the art. In virtually all passive RFID systems, the RF waves are received by the tag antenna through an analog circuit and are demodulated into the incoming RF information. E.g., "The modulated HF [or UHF] signal from the reader is reconstructed in the HF [or UHF] interface by demodulation to create a digital serial data stream for reprocessing in the address and security logic." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses an analog circuit providing information defining a state of a transponder in which it must respond to the interrogator. E.g., col. 11, lns. 41-45; col. 12, lns. 40-55. **Huber '315** discloses an analog circuit that recovers an interrogating RF signal that defines the state of the RFID transponder. E.g., col. 2, lns. 37-68; col. 15, lns. 18-24. **Schuermann '112** discloses an analog circuit providing information corresponding to the resonant frequency of the tag, i.e., the state of the tag. E.g., col. 5, lns. 29-46; col. 10, lns. 12-40. **Schuermann '774** discloses an analog circuit that recovers RF signals defining a state in which it transmits to the interrogator.. E.g., Fig. 2; col. 10, 55-col. 11, l. 20. **Snodgrass '551** discloses an analog circuit that recovers signals defining a series of states of the transponder. E.g., col. 15, l. 36-col. 17, l. 6. **Stewart '155** discloses wireless RF tags that take specific actions (change their states) in response to analog signals from a reader. E.g., col. 6, l. 36-col. 7, l. 44.

	Turner '381 discloses an analog circuit that receives information received from the reader regarding the transponder's mode of operation, i.e., its state. E.g., col. 3, l. 64-col. 4, l. 16. **Beigel '409** discloses an analog circuit that provides information received from the interrogator regarding the desired state of the transponder. E.g., Figure 1, Figure 3. **Edwin '988** discloses an RFID transponder that receives information through its analog circuitry from the interrogator regarding the tag's desired state. E.g. col. 5, lns. 12-47. **Littlechild '712** discloses an RFID tag that receives data from the interrogating signal through the analog circuit, including a time stamp number and an identification number, and responds (changes state) in response to the interrogating signal. E.g., p. 5, l. 9-p. 6, l. 7; p. 20, lns. 4-18 (signal can provide operating configuration information). **IBM 9003/9008** discloses an RFID tag that communicates with base stations through an RF front end, which receives command that alter the states of the tag's state machines. E.g., IN0894079, IN0894081-3. **ISD9664** discloses an RFID tag that utilizes an RF front end to receives analog signals that change the transponder's state. E.g., TAGSYS 00036, TAGSYS 20; TAGSYS 00054; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[c] executing at least one command in accordance with said state information;	A digital state machine coupled to the analog RF front end is inherent in passive RFID tags with memory functions. "Transponders with a memory function contain RAM, ROM, EEPROM, or FRAM and a HF [or UHF] interface to provide the power supply and permit communication with the reader. The main characteristic of this family of transponders is the realisation of address and security logic on a chip using a state machine." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses a state machine in digital form to execute

	at least one command. E.g., col. 12, lns. 13-16. **Huber '315** discloses a digital state machine for executing commands in accordance with the state information received. E.g., "...and thereupon activates the programming logic 232 if a programming command has been previously received by command decoder 230." Col. 9, lns. 21-23. **Schuermann '112** discloses such a digital state machine coupled to an analog circuit. E.g., col. 12, lns. 39-52, whereby the transponder responds to the interrogtor's data by one of two frequencies in the upload mode, one corresponding to "0" and one to "1.". **Schuermann '774** discloses a digital state machine coupled to the analog circuit for the purpose of executing commands received from the interrogator. E.g., col. 10. lns. 55-60; col. 11, lns. 7-38. **Snodgrass '551** specifies a system in which the transponder utilizes a digital state machine to execute at least one command in accordance with state information. E.g., col. 24, lns. 16-18. **Turner '381** discloses a transponder controller providing command that change the mode (state) of the transponder. E.g., col. 2, lns. 25-37. **Beigel '409** discloses digital circuitry that executes commands in accordance analog signals received from the interrogator, which require the transponder to change states. E.g., col. 8, l. 62-col. 10, l. 52, Figures 1-3. **Edwin '988** discloses an RFID transponder that utilizes a digital state machine to communicate in response to interrogation commands. E.g. col. 1, lns. 29-38; Figure 4. **Littlechild '712** discloses a digital processor that executes commands in accordance with state information received from the interrogating signal. E.g., p. 21, l. 18 - p. 22, l. 12. **IBM 9003/9008** discloses digital state machines on the tag that execute commands in accordance with state information. E.g.,

	IN0894081-3. **ISD9664** discloses a digital processing chip that executes commands in accordance with state information. E.g., TAGSYS 00003-4; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[d] storing and retrieving digital data responsive to said at least one command;	This is inherent in RFID systems with writeable transponder memory cells. **Carroll '427** discloses use of a memory for storing and retrieving digital data. E.g., "Preferably, an EEPROM (Erasable Electrical Programmable Read Only Memory) device could be used." Col. 9, lns. 50-52. **Huber '315** discloses means to store and retrieve information from the transponder which can be a command to a PHOSITA. E.g., "...means are provided to demodulate from the RF carrier wave data which may be stored in the responder unit memory." Col. 2, lns. 8-10. **Schuermann '112** discloses the use of an EEPROM memory, SRAMs, and latches to maintain and retrieve state information following the lapse the interrogating RF signal. E.g., Col. 7, ln. 68-col. 8, ln. 7. **Schuermann '774** discloses the use of RAM memory, which is capable of maintaining and retrieving state information for a period of time following the lapse of the interrogating RF signal. E.g., col. 11 lns. 33-38. It is inherent in the description of such memory in the patent that it could include RAM, ROM, EEPROM, or any other form of memory. **Snodgrass '551** discloses the use of battery-powered memory able to maintain digital state information during a loss of power from the interrogating RF signal which can then be retrieved afterwards. E.g., col. 7 lns. 28-36. A PHOSITA would expect such memory to be either RAM or an EEPROM. **Turner '381** discloses a transponder that stores codes for transmission to the reader, which inherently requires memory in the transponder. E.g., col. 3, lns. 30-34.

	Beigel '409 discloses memory able to store and retrieve digital data responsive to commands. E.g., col. 6, ln. 60 - col. 7, ln. 2, Figures 1-3. **Edwin '988** discloses memory (registers) able to store an retrieve digital data responsive to commands. E.g. col. 3, lns. 41-48, Figure 4. **Littlechild '712** discloses memory able to store and retrieve digital data responsive to commands. E.g., Abstract, Figure 8, Figure 11. **IBM 9003/9008** discloses an EEPROM. E.g., IN0894083. **ISD9664** discloses an EEPROM for storing data for later retrieval. E.g., TAGSYS 00018-22; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-3.
[e] providing electrical power for said RFID transponder derived from said interrogating RF signal;	Passive RFID tags derive a voltage rectified from the interrogating RF signal to power the chip circuitry. "Passive transponders, *i.e.* transponders that do not have their own power supply, are supplied with energy via the HF [or UHF] field of the reader. To achieve this, the HF [or UHF] interface draws current from the transponder antenna, which is rectified and supplied to the chip as a regulated voltage supply." Klaus Finkenzeller, *The RFID Handbook*, at p. 172 (1999). **Carroll '427** discloses a circuit that accumulates the rectified voltage from the interrogating RF signal. E.g., col. 7, ln. 63-col. 8, ln. 27. **Huber '315** discloses "an energy accumulator for storing the energy contained in said interrogation signal received by said responder unit by which the components of said responder unit may be supplied with energy," Col. 15, lns. 14-17. **Schuermann '112** discloses a transponder utilizing an electrical power derived from the interrogating RF signal and stored for powering the circuit "wherein said energy storage device is a storage capacitor." Col. 8, lns. 51-52.

	Schuermann '774 discloses a responder unit with: "...an energy accumulator for storing the energy contained in said at least one interrogation signal as received by said responder unit," Col. 13, lns. 28-30, Claim 1. **Turner '381** discloses a capacitor that powers the transponder, which is energized by the interrogating RF signal. E.g., col. 3, lns. 30-35. **Beigel '409** discloses a capacitor that powers the transponder with voltage derived from the interrogating RF signal. E.g., col. 4 lns. 48-54, Figure 1. **Edwin '988** discloses a power supply for the transponder that charges a capacitor with voltage derived from the interrogating RF signal. E.g., col. 3, lns. 32-40. **Littlechild '712** discloses a passive transponder with an on-board power supply that is charged by voltage derived from the interrogating RF signals, including a storage capacitor. E.g., Abstract, p. 2, ln. 21 - p. 3, ln. 5, p. 21, lns. 13-15, p. 23. lns. 20-23. **IBM 9003/9008** discloses a power capacitor coupled to its analog section and deriving voltage from the RF signal. E.g., IN0894084. **ISD9664** discloses an RFID tag that utilizes a power capacitor that powers its circuitry with voltage derived from the RF signal. E.g., TAGSYS 00038.
[f] and maintaining said state information during a temporary lapse in receipt of said interrogating RF signal.	**Carroll '427** discloses an EEPROM memory that maintains the state information when the interrogating RF signal lapses. It specifies "an EEPROM (Erasable Electrical Programmable Read Only Memory) device." Col. 9, lns. 51-52. **Huber '315** discloses using a variety of persistent memory devices, including SRAMs, DRAMs, EEPROMs, EPROMs, and latches to store state information during a loss in tag power. E.g., col. 4, lns. 35-45, col. 13, lns. 51-57. **Schuermann '112** discloses the use of an EEPROM memory, SRAMs, and latches to maintain state information following the

	lapse the interrogating RF signal. E.g., Col. 7, ln. 68-col. 8, ln. 7. **Schuermann '774** discloses the use of RAM memory, which is capable of maintaining state information for a period of time following the lapse of the interrogating RF signal. E.g., col. 11 lns. 33-38. Such memory would inherently include RAM, ROM, EEPROM, or any other basic form of memory that is maintained for a specific duration following lapse of power. **Snodgrass '551** discloses the use of battery-powered memory able to maintain digital state information during a loss of power from the interrogating RF signal. E.g., col. 7 lns. 28-36. A PHOSITA would expect such memory to be RAM, an SRAM, or an EEPROM. **Stewart '155** discloses the use of tenacious latches for tag or command states to persist even through short interruptions of the power supply. E.g., col. 2, lns. 9-11; col. 5, lns. 8-11. Stewart '155 further discloses tag power supplied by the receipt of an interrogating RF signal, which may be interrupted. E.g., col. 1, lns. 26-41; col. 2, lns. 31-34. **Turner '381** discloses the use of a capacitor to maintain the transponder's mode for a period of time that continues regardless of whether the transponder remains energized or not. E.g., col. 4, lns. 26-35. **Beigel '409** discloses the use of an EEPROM to write and store tag data in response to a command received from the interrogator, which persists through interruptions in the passive transponder's power supply caused by a lapse in the interrogating RF signal. E.g., col. 6, ln. 60 - col. 7, ln. 2. **Edwin '988** discloses the use of non-volatile memory in a passive transponder to store a bit of information in response to the interrogator's command, the stored bit indicating whether the transponder is to transmit in high or low power mode, and maintaining such information during a loss in RF power. E.g., col. 3, ln. 41 - col. 4, ln. 11. **Littlechild '712** discloses a variety of memory cells that store transponder state information during a loss in transponder power

	due to a lapse in the interrogating RF signal, including modified DRAM cells and EEPROMs. E.g., Abstract; p. 21, l. 18 - p. 25, l. 10. **IBM 9003/9008** discloses a lockable state machine that maintains state data once locked or unlocked, regardless of loss of power from the interrogating RF signal. E.g., IN0894100. IBM 9003/9008 further discloses that the RFID tag writes data to its EEPROM in response to commands that include "WRITE_MULTIPLE, WRITE, BULK_WRITE, LOCK, and UNLOCK," which data is stored through lapses in tag power. E.g., IN0894123. **ISD9664** discloses a capacitor that is charged prior to a loss of power to indicate whether the tag should enter program mode after regaining power that was lost during a lapse in power from the tag's power capacitor. E.g., TAGSYS 00023, TAGSYS 00030; TAGSYS 00032; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-5.

Alien further contends that claim 21, and each claim that depends therefrom, is indefinite under 35 U.S.C. § 112(2), and not supported by the written description (i.e., the written description is inadequate) and not enabled under 35 U.S.C. § 112(1), with regard to the phrase "a temporary lapse in receipt of said interrogating RF signal."

Claim 22

Alien contends that claim 22 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Huber '315, Schuermann '112, Beigel '409, Edwin '988, Littlechild '712, and/or ISD9664, as shown in the invalidity chart for claim 21 and the claim chart below. Thus, claim 22 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity chart for claim 21 and the claim chart below, claim 22 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Huber '315, Schuermann '112, Beigel '409, Edwin '988, Littlechild '712, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, and/or ISD9664 in combination with Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 2. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 22.

Claim Element	Prior Art
22. The method of claim **21**, wherein said maintaining step further comprises receiving a voltage corresponding to said state information, and charging a capacitor by said voltage.	Almost all memory circuits, such as DRAMs, utilize stored voltage differentials to record data bits. *See*, *e.g.*, Sung-Mo Kang, Yusuf Leblebici, *CMOS Digital Integrated Circuits, Analysis and Design*, at 442-43 (1999); Haldun Haznedar, *Digital Microelectronics*, at 444-46 (1991); P. K. Chatterjee, et al., "A Survey of High-Density Dynamic RAM Cell Concepts," ED-26 IEEE TRANSACTIONS ON ELECTRON DEVICES 827-839 (June 1979) as shown in Figure 10.44.a in Kang/Leblebici and Haznedar. **Huber '315** discloses using a variety of memory devices, including capacitor-based DRAMs and EEPROMs, to store state information. E.g., col. 4, lns. 35-45; col. 13, lns. 51-57. A DRAM is essentially a capacitor charged by a voltage. **Schuermann '112** discloses the use of DRAMs, EPROMs, and other capacitor-based memory cells to maintain state information following lapse of power from the interrogating RF signal. E.g., col. 7, ln. 68-col. 8, ln. 7. A DRAM is essentially a capacitor charged by a voltage. **Stewart '155** discloses the use of capacitors, charged by a voltage, to store state information through short interruptions of the power supply. E.g., Figure 4; col 6, lns. 11-17. **Beigel '409** discloses the use of multiple types of memory, including EEPROMs and dynamic memory with capacitors that store state information. E.g., col. 2, lns. 3-31. Such capacitors would be charged by a voltage. **Edwin '988** discloses the use of non-volatile registers in a passive transponder to store state information. E.g., Figure 4; col. 3, lns. 41-48. One skilled in the art would understand that such memory can include DRAMs, which have capacitors, charged by a voltage. **Littlechild '712** discloses persistent memory cells that utilize capacitors, charged by a voltage, to store data. E.g., Abstract; p. 23, lns. 5-15.

	ISD9664 discloses a capacitor that is charged by a voltage prior to a loss of power to indicate whether the tag should enter program mode after regaining power that was lost during a lapse in power from the tag's power capacitor. E.g., TAGSYS 00023, TAGSYS 00030; TAGSYS 00032; Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-5.

Claim 23

Alien contends that claim 23 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Schuermann '112, Edwin '988, Littlechild '712, and/or ISD9664, as shown in the invalidity charts for claims 21, 22 and the claim chart below. Thus, claim 23 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity charts for claims 21, 22 and the claim chart below, claim 23 is invalid under 35 U.S.C. § 103(a) as being obvious over (i) Schuermann '112, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Turner '381, Beigel '409, Edwin '988, Littlechild '712, IBM 9003/9008, and/or ISD9664, in combination with Stewart '155.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 23.

Claim Element	Prior Art
23. The method of claim **22**, further comprising the step of preventing discharge of said capacitor during said temporary lapse in receipt of said interrogating RF signal.	Avoiding premature discharge of the capacitors is a fundamental requirement of memory designs that utilize capacitors, which are common. Muhammad Ali Mazidi and Janice Gillispie Mazidi, Assembly Language, Design and Interfacing, Prentice Hall, Upper Saddle River, 1998, p. 238. By definition, a capacitor will hold charge during a temporary lapse of received voltage. **Schuermann '112** discloses the use of DRAMs, EPROMs, and other capacitor-based memory cells to maintain state information following lapse of power from the interrogating RF signal. E.g., col. 7, l. 68-col. 8, l. 7. A DRAM is essentially a capacitor charged by a voltage. A PHOSITA would understand that discharge could be prevented by the use of a diode or like device. **Stewart '155** discloses the use of capacitors to store state information through short interruptions of the power supply.

	E.g., Figure 4; col. 5, lns. 41-51; col 6, lns. 11-17. **Edwin '988** discloses the use of registers in a passive transponder to store state information in non-volatile memory, which by definition prevents discharge during power-down. E.g., col. 3, lns. 41-48. **Littlechild '712** discloses persistent memory cells that utilize capacitors to store data, where discharge is prevented by a transistor. E.g., Abstract; Figures 3(a), 11; p. 23, lns. 5-15; p. 24, l. 16-col. 25, l. 5. **ISD9664** discloses a capacitor that is charged prior to a loss of power to indicate whether the tag should enter program mode after regaining power that was lost during a lapse in power from the tag's power capacitor. E.g., TAGSYS 00023, TAGSYS 00030; TAGSYS 00032;Design Techniques for Low Power Mixed Analog-Digital Circuits With Application to Smart Wireless Systems, Said Fare Al-Sarawi, at 210-5.

Alien further contends that claim 23 is indefinite under 35 U.S.C. § 112(2), and not supported by the written description (i.e., the written description is inadequate) and not enabled under 35 U.S.C. § 112(1), due to the phrase "preventing discharge of said capacitor during said temporary lapse in receipt of said interrogating RF signal."

Claim 24

Alien contends that claim 24 of the '841 patent is invalid on grounds of anticipation and/or obviousness. Each and every element of the claim can be found in at least Schuermann '112, Littlechild '712, and/or ISD9664, as shown in the invalidity charts for claims 21, 22 and the claim chart below. Thus, claim 24 is invalid under 35 U.S.C. § 102(b). Furthermore, as also shown in the invalidity charts for claims 21, 22 and the claim chart below, claim 24 is invalid under 35 U.S.C. § 103(a) as being obvious over (i), Schuermann '112, Littlechild '712, and/or ISD9664, alone or in combination; and/or (ii) Carroll '427, Huber '315, Schuermann '112, Schuermann '774, Beigel '409, Edwin '988, Littlechild '712, and/or ISD9664, in combination with Schuermann '112, Littlechild '712, and/or ISD9664.

With regard to the various combinations of references that may be relied upon to show obviousness, Alien refers to its statements about motivation to combine set forth in connection with claim 1. Those same factors would have motivated a PHOSITA to make combinations of or variations on the cited prior art so as to arrive at claim 24.

Claim Element	Prior Art

24. The method of claim **22**, further comprising the step of restoring said voltage corresponding to said state information following said temporary lapse in receipt of said interrogating RF signal.	Intermec's state holding cell is essential a DRAM. By definition, the function of a single cell DRAM is to hold a memory variable when the writing signal is removed. Restoring power to such a circuit is well known in the prior art. E.g., Muhammad Ali Mazidi and Janice Gillispie Mazidi, *Assembly Language, Design and Interfacing* 238 (Prentice Hall, Upper Saddle River, 1998).. **Schuermann '112** discloses returning a voltage to a capacitor following a temporary lapse of power in a way that returns it to a prior state. E.g., col. 6, lns. 11-27. **Littlechild '712** discloses a circuit for storing a bit of data during a power outage and a way of refreshing said data following a temporary loss of tag power. E.g., p. 25, lns. 5-15. **ISD9664** discloses a circuit that restores voltages upon powering up. TAGSYS 00023-24, TAGSYS 30,